

5 YEAR PLAN

ONE HANFORD: DELIVERING ON ENVIRONMENTAL REMEDIATION & TREATING TANK WASTE

GOALS: DRIVING TO END STATE COMPLETION



MINIMUM SAFE OPERATIONS
Safely, securely and compliantly **MANAGE** Hanford's critical resources efficiently including rejuvenated, re-configured and right-sized infrastructure to reliably sustain the Hanford cleanup mission.



WASTE TREATMENT
OPERATE the WTP in DFLAW mode to vitrify tank waste into a stable glass form for disposal. **MANAGE** secondary liquid waste and solid wastes generated in the treatment processes. **CHARACTERIZE** waste generated from CERCLA remedial actions for treatment and disposal. **EXPLORE** opportunities for alternate treatment and disposition pathways.



RISK REDUCTION
CLEAN UP Central Plateau and River Corridor waste sites and **DEMOLISH** facilities to support RODs that are protective of ongoing groundwater remedial actions. **MINIMIZE** the footprint requiring extensive surveillance and maintenance activities. Safely **STORE** tank waste in SSTs until it can be transferred into DSTs and/or alternative treatment pathways and **PROCEED** to closure of waste management areas.



WASTE DISPOSITION
MANAGE the interim storage of K Basins sludge, Cs/Sr capsules, loaded ion-exchange columns, SNF and TRU until final decisions regarding their treatment and/or disposition are **ESTABLISHED** while **OVERSEEING** disposal facilities (i.e., ERDF, MLLW Burial Trenches 31&34, IDF and State Approved Land Disposal Site – SALDS) operations.



LONG-TERM STEWARDSHIP
Transition lands where waste site remediation and facility demolition were completed to long-term stewardship, minimizing life-cycle surveillance and maintenance costs.

MAJOR COMPONENTS OF THE HANFORD SITE CLEANUP MISSION

TANK WASTE CLEANUP

- Located within the Inner Area of the Central Plateau (~10 square miles)
- Safely managing tank waste in 177 underground storage tanks
- Staging and conditioning waste to meet treatment facilities' waste acceptance criteria
- Retrieving waste from single-shell tanks into double-shell tanks (many SSTs have or are suspected to have leaked in the past)
- Initiating tank waste treatment via direct feed low-activity waste (DFLAW) no later than FY2024, then transitioning to high-level waste and supplemental treatment

CENTRAL PLATEAU CLEANUP

- Approximately 75 square miles in the central portion of the Hanford Site
- Contains 15 soil, 6 legacy processing facilities and 4 groundwater operable units
- Remediating hundreds of contaminated waste sites and demolishing facilities
- Ongoing solid waste disposal operations
- Ongoing groundwater pump-and-treat operations

RIVER CORRIDOR CLEANUP

- Approximately 220 square miles in proximity to the Columbia River
- Contains 20 soil and 6 groundwater operable units
- Remediating remaining waste sites and demolishing facilities
- Active groundwater remediation (pump-and-treat and sequestration)
- Transition remediated geographic areas to Long-Term Stewardship



FY2019

CRITICAL ACTIVITIES:

TANK WASTE

- Complete TSCR Design and NEPA Review
- Deliver TBI
- ✓ Commence AX Retrievals
- ✓ Implement Tank Farm Upgrades
- ✓ Accomplish Key Effluent Management Facility Construction Activities

CENTRAL PLATEAU

- Complete 234-5Z and 236-Z Demolition
- ✓ Complete Final Design for Cesium/Strontium Cask Storage System
- ✓ Complete PUREX Tunnel 2 Stabilization
- ✓ Remove 10 Containers from the Outside Storage Areas
- ✓ Treat 1.8 billion Gallons of Contaminated Groundwater
- ✓ Complete Site Infrastructure Projects on Schedule to Support Future Operation of DFLAW

RIVER CORRIDOR

- ✓ Complete Sludge Removal and Transport to T Plant
- ✓ Complete 324 Building Hot Cell Cleanout
- ✓ Initiate 100-BC Proposed Plan Public Review

✓ COMPLETE

➢ CARRYOVER

FY2020



TSCR facility rendering

CRITICAL ACTIVITIES:

TANK WASTE

- Tank Side Cesium Removal (TSCR) Pretreatment System Delivered and Installed [PICTURED]
- Finalize Program and Processes to Qualify Tank Waste to Meet Waste Acceptance Criteria
- Complete Tank Farm Waste Feed Delivery (WFD) Upgrades
- Complete WTP to Liquid Effluent Retention Facility (LERF) Transfer Line Tie-in
- Complete Effluent Treatment Facility (ETF) Secondary Waste Upgrade
- Receive First Immobilized Low-Activity Waste (ILAW) Transporter
- Initiate Construction of the Central Plateau Water Treatment Facility (CPWTF)
- Complete All LAW Turnovers to Startup
- Complete WTP Analysis of Alternatives

CENTRAL PLATEAU

- Complete and Closeout PFP Slab on Grade
- Initiate Capsule Storage Area Construction
- Complete Integrated Disposal Facility (IDF) Safety Analysis/Permitting/Upgrades to Support Direct-Feed Low-Activity Waste (DFLAW)
- PFP Crib Stabilization
- REDOX Canyon Cleanout
- Obtain 200-BP-5 and 200-PO-1 Interim Record of Decision

RIVER CORRIDOR

- Continue 105-KW Basin Deactivation
- Complete Removal of 324 B Hot Cell Floor
- Obtain 100-BC Area Record of Decision (ROD)

FY2021

CRITICAL ACTIVITIES:

TANK WASTE

- Complete Next Five Retrievals (Consent Decree Milestone B-3)
- Implement Integrated Site-wide Operations
- Initiate TSCR Operations



Water treatment facility rendering

CENTRAL PLATEAU

- CPWTF Operational [PICTURED]
- Install WFD Transfer Lines
- Complete LERF/ETF DFLAW Upgrades
- Complete Effluent Management Facility (EMF) Construction
- Transition All Lab, Low-Activity Waste (LAW) and Balance of Facilities Systems to Commissioning (Excluding EMF)

CENTRAL PLATEAU

- Complete Capsule Storage Area Construction
- Complete PUREX Removal Action Work Plan
- Complete Overlay of Interior 200 East Roads
- Replace 200W 1.1M-Gallon Potable Water Tank
- Complete 400 Area Fire Station

RIVER CORRIDOR

- Complete 100-BC Area Remedial Design Report/Remedial Action Work Plan
- Complete Waste Site 300-296 Remote Excavation/Mortgage Reduction for 324 Building
- Obtain 100-K & N Area RODs

FY2022



DFLAW Commissioning (WTP)

CRITICAL ACTIVITIES:

TANK WASTE

- Resume 242-A Evaporator Operations
- Complete Construction on TX-Farm Surface Barrier
- Transition EMF to Commissioning
- Complete WTP Loss of Power Testing
- Complete First & Second LAW Facility Melters Heat-Up
- Start LAW Facility Cold Commissioning with Simulated Tank Waste [PICTURED]
- Complete 12" Potable Water Line Loop to WTP
- Complete WTP Water Run
- Complete LERF Basin 41 Replacement

CENTRAL PLATEAU

- Complete 224-B Demolition
- Install High Capacity Fiber Optic to the Central Plateau
- Replace 200E 1.1M-Gallon Potable Water Tank
- Complete WESF Modifications Construction

RIVER CORRIDOR

- Complete 100-K & N Area Final Remedial Design Report/Remedial Action Work Plan
- Replace 181D Vertical Turbine Pumps
- Operate 100-KR-4 and 100-HR-3 Pump & Treats
- 105-KW Characterization and Dewatering/Mortgage Reduction

FY2023

CRITICAL ACTIVITIES:

TANK WASTE

- Complete AX-Farm Retrievals
- Complete LAW Facility Operational Readiness Review to Authorize Hot Commissioning
- Commence Hot Commissioning of WTP LAW Vitrification and Effluent Management Facilities
- Initiate A-Farm Retrieval
- Complete High-Level Waste (HLW) Design
- Complete 230kV Transmission System Reconditioning



Cesium/Strontium dry storage rendering

CENTRAL PLATEAU

- Initiate Transfer of Cesium/Strontium (Cs/Sr) Capsules to Capsule Storage Area [PICTURED]
- Initiate 224-T Deactivation
- Replace Single-Circuit Distribution Poles

RIVER CORRIDOR

- Replace 181B Vertical Turbine Pumps
- Operate 100-KR-4 and 100-HR-3 Pump & Treats

FY2024



Construction of the High-Level Waste facility

CRITICAL ACTIVITIES:

TANK WASTE

- Initiate LAW Waste Treatment Operations
- Resume WTP HLW Facility Construction [PICTURED]
- Initiate Alternative Treatment & Disposition of Tank Waste

CENTRAL PLATEAU

- Initiate IDF Operations
- Complete 224-T Demolition
- Eliminate All IT Services from Gable Mountain - West
- Advancement of Cs/Sr Capsule Transfers to Dry Storage

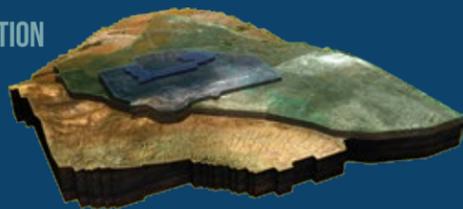
RIVER CORRIDOR

- Operate 100-KR-4 and 100-HR-3 Pump & Treats

PAGE OF OPERATIONS

ONE HANFORD TRANSITION

As cleanup progresses, the focus is on One Hanford Mission. The pace of this mission will accelerate. In the coming years, Hanford will expand to around-the-clock operations in order to support tank cleanup, the waste treatment facility and land management.



DIRECT FEED LOW-ACTIVITY WASTE

The waste treatment plant's new Direct Feed Low-Activity Waste (DFLAW) process is the first of many long-term cleanup activities that will take place at Hanford. Cold commissioning and testing will begin as early as FY2021 and be the catalyst to elevate Hanford's cleanup pace for the foreseeable future.



ESSENTIAL SERVICES

The Hanford Site will transition to decades of 24/7 operations. This will affect how essential services will continue to be safely and flexibly delivered with the right level of rigor and robustness. Today, nearly 200 service unit upgrades are prioritized and are being planned through FY2024 to support the pace of operations. Currently, WTP utilizes 42 site services and will transition up to 76 services with 27 required during 24/7 operations.

THE FUTURE OF CLEANUP



By FY2024, Tank Waste Cleanup will be ramping up to producing ILAW at 21 metric tons of glass/day and disposing of it at IDF, will have retrieved 6 SSTs and resumed

construction on the HLW Vitrification Facility.

Central Plateau Cleanup will have initiated transfers of Cs/Sr capsules to dry storage, reduced risk/mortgage cost for several aging facilities, and treated approximately 5 billion gallons of groundwater.

River Corridor Cleanup will have obtained final 100-BC, 100-N and 100-K Record of Decisions, remediated numerous waste sites and facilities, and treated approximately 5 billion gallons of groundwater. Safely, efficiently and effectively reducing risk and progressing the Hanford Site cleanup mission.